

UNCLASSIFIED

PROCESSING DATE--27NOV70

1/2 020

TITLE--ACETYLCHOLINE. MOLECULAR MECHANISM OF ACTION -U-

AUTHOR--(02)-MIKHELSON, M.YA., ZEYMAL, E.V. **Z**

COUNTRY OF INFO--USSR

SOURCE--ACETYLCHOLINE. MOLECULAR MECHANISM OF ACTION (ATSETILKHOLIN. O MOLEKULYARNOM MEKHANIZME DEYSTVIYA) LENINGRAD, NAUKA, 1970, 278 PP

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHOLINERGIC, CHOLINESTERASE, NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0068

STEP NO--UR/0000/70/000/000/0001/0278

CIRC ACCESSION NO--AM0129341

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

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CIRC ACCESSION NO--AM0129341

ABSTRACT/EXTRACT--(U) GP-0-

EDITOR 3. INTRODUCTION

SYNOPSIS 13. II NATURE

METHODS FOR STUDY OF THEIR

EVALUATION OF THE EFFECT OF

CHOLINE RECEPTOR 63. IV

STRUCTURE OF ACTIVE CENTER

V RELATIVE POSITION OF

RECEPTIVE MEMBRANE 150. VI

RECEPTORS DURING EVOLUTION

219. BIBLIOGRAPHY 238.

THE BOOK DEALS WITH THE

MEDIATOR ACETYLCHOLINE.

ON CHOLINERGIC STRUCTURES

CHOLINE RECEPTORS AND

STRUCTURE DURING EVOLUTION.

ABSTRACT. TABLE OF CONTENTS: FROM THE
5. CHAPTER 1. FUNCTION OF CHOLINERGIC
OF CHOLINE RECEPTORS AND CHOLINESTERASES AND
54. III QUANTITATIVE
SUBSTANCES WHICH STIMULATE AND BLOCK THE
REACTIVITY OF THE ACETYLCHOLINE MOLECULE AND
CHOLINE RECEPTORS AND CHOLINESTERASES 94.
ON THE CHOLINE
CHANGES IN RELATIVE POSITION OF CHOLINE
NON SYNAPTIC CHOLINE RECEPTORS
NAME INDEX 273.
SUBJECTS INDEX 266.
THE BEST KNOWN
A COMPARISON OF
THEIR EFFECTS
ON THE STRUCTURE OF
AS WELL AS CHANGES IN THIS

UNCLASSIFIED

USSR

UDC 621.315.592

ZHURAKOVSKIY, L. A., ZEYNALLY, A. KH., KOLOMIYETS, B. T., KRASIL'NIKOVA, V. A.

"Frequency Characteristics of Diode Structures of the Metal-Chalcohalide Glass-Metal Type"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1917-1919

Abstract: A study was made of diode structures of the metal-chalcohalide glass-metal type (SbSI and AsTeI glass was used as the interstitial layer) with gold, silver, copper and antimony electrodes. These structures have static volt-ampere characteristics described by power functions with the exponent n varying from 1 to 3-5. The Au-SbSI-Au structure which has a static volt-ampere characteristic containing a segment of N-type negative resistance constitutes an exception. The frequency dependencies of the conductance and susceptance were measured in the frequency range from 0 to 10 megahertz. In the low-frequency range the conductance does not depend on the frequency, but in the high frequency range the conductance depends approximately linear on frequency. The capacitance of the diode structures is constant at low frequencies, and it decreases with an increase in frequency.

1/2

USSR

ZHURAKOVSKIY, L. A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1917-1919

The experimental results are explained under the assumption that the conductance is of a discontinuous nature in the high frequency range and that equivalent schemes of the investigated diode structures are different at low and high frequencies. Graphs are presented for the capacitance of the Au-SbSI-Au diode structure as a function of the amplitude of the applied voltage taken at various frequencies. These relations confirm that at low frequencies the capacitance of the diode structure must depend on the injection level, that is, it must depend on the voltage amplitude and increases with an increase in the latter, and at high frequency the relation is not observed since the charge capacitance does not depend on the amount of injected charge.

2/2

- 141 -

USSR

UDC: 621.315.592

BEZDETNYI, N. M., GORBATOV, G. Z., ZEYNALLY, A. Kh., and LEBEDEV, N. N., Azerbaydzhan State University imeni S. M. Kirov, Baku

"The Photo-EMF Spectral Distribution in SbSI"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972, pp 1189-1190

Abstract: This brief communication is the consequence of an earlier article authored by some of those named above (Bezdetnyy, N. M., et al, FTT, 13, 1971, p 1242) in which it was shown that the near-surface illumination of SbSI layers using light from the maximum sensitivity region produces a voltage and the flow of short-circuit currents in the external circuit. These are caused by the bend in the zones at the ends of the specimen. In the present communication, the authors investigate the spectral distribution of the photovoltaic output of the SbSI layers after dividing the specimens into two groups depending on the type of bending in the zones at the ends. The spectral distribution of both groups is shown.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--QUANTITATIVE DETERMINATION OF ISOPROPYL ALCOHOL AND WATER IN A
PETROLEUM PRODUCT BY MEASURING THE DIELECTRIC CONSTANT AND ELECTRICAL
AUTHOR--(03)-SADYKHOV, I.D., MAKSIMOV, S.I., ZEYNALOV, A.YA.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 43
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--ELECTRICAL CONDUCTIVITY, PROPANOL, ISOMER, DIELECTRIC
CONSTANT, UREA, PETROLEUM DEWAXING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1512 STEP NO--UR/0318/70/000/002/0043/0043
CIRC ACCESSION NO--AP0118499
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

2/2 011

CIRC ACCESSION NO--AP0118499

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RAPID DETN., SUITABLE FOR LAB.
AND CONTINUOUS ATOMATIC ANALYZERS, USED A TRICOMPONENT DIAGRAM BASED ON
THE DIFFERENT DIELEC. CONST. AND COND. OF EACH OF THE STREAM COMPONENTS,
AND WAS APPLIED TO UREA DEWAXING OF PETROLEUM PRODUCTS.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SOLUBILITY OF CARBON DIOXIDE IN ORGANIC SOLVENTS -U-
AUTHOR--(051)-PODVIGAILOVA, I.G., ZEYNALOV, B.K., KRUGLIKOV, A.A.,
RAIYZHABOV, D.T., SHAGIDANOV, E.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 338-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CARBON DIOXIDE, PETROLEUM HYDROCRACKING, PHOSPHATE, ORGANIC
SOLVENT, SOLUBILITY, PETROLEUM RESIDUE, XYLENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0340
CIRC ACCESSION NO--AP0137444
STEP NO--UR/0064/70/046/005/0338/0339
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137444

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. USED TO DET. THE SOLY. (IN VOLS.-VOL.) OF CO SUB2 IN LIQS. OR SOLNS. IS DESCRIBED. THE SOLY. IN 58 LIQS. TESTED RANGED FROM 126 FOR ET SUB2 NH TO 0.4 TRIXYLYLENE PHOSPHATE. THE FOLLOWING SUBSTANCES MAY FIND USE IN THE REMOVAL OF ACIDIC GASES FROM AIR OR INDUSTRIAL GASES: ET SUB2 NH, POLYETHYLENE POLYANINE (2PERCENT SOLN. ABSORBS 7.6 VOLS. CO SUB2-VOL), AND PLASTIZAN 30A (ETHYLENE GLYCOL C SUB7-9 FATTY ACID ESTERS) 11 VOL. ABSORBS 2.7 VOLS. CO SUB2), WHICH IS PRODUCED FROM INEXPENSIVE AND AVAILABLE PETROLEUM CRACKING RESIDUES.

UNCLASSIFIED

1/2 025
TITLE--OIL ADDITIVES -U- UNCLASSIFIED 2 PROCESSING DATE--04DEC70
AUTHOR--(05)-KULIYEV, A.M., ZEYNALOVA, K.A., SADYKHOV, K.I., SULEYMANOVA,
F.G., DRUDZHEVA, I.M.
COUNTRY OF INFO--USSR
SOURCE--BAKINSKIY RABOCHIY, SEPTEMBER 18, 1970, P 3, COL 3
DATE PUBLISHED--18SEP70
SUBJECT AREAS--MATERIALS, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--LUBRICATING OIL, LUBRICANT ADDITIVE, CHEMICAL SYNTHESIS,
PETROLEUM REFINING, HONORARY TITLE AWARD, CHEMICAL PERSONNEL/(U)BFX
LUBRICATING OIL ADDITIVE, (U)SB3 LUBRICATING OIL ADDITIVE, (U)SK3
LUBRICATING OIL ADDITIVE, (U)AZNI18U LUBRICATING OIL ADDITIVE,
(U)INKHP21 LUBRICATING OIL ADDITIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605011/B09 STEP NO--UR/9000/70/000/000/0003/0003
CIRC ACCESSION NO--AN0140180
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AN0140180
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. "THE DEVELOPMENT OF THE SYNTHESIS
TECHNOLOGY FOR THE EFFICIENT ADDITIVES TO MOTOR OILS REFINED FROM THE
BAKU PETROLEUMS, BFK, SB 3, SK 3, AZNII 8U, AND INKHP 21, AND REDUCING
IT TO INDUSTRIAL APPLICATIONS", THE WORK DONE BY A. M. KULIYEV, K. A.
ZEYNALOVA, K. I. SADYKHOV, F. G. SULEYMANOVA, I. M. DRUDZHEVA, I. I.
NAMAZOV, AND V. YE. BASHAYEV HAS BEEN NOMINATED BY THE INSTITUTE OF
CHEMISTRY OF ADDITIVES OF THE AZERBAIDZHAN ACADEMY OF SCIENCES FOR THE
STATE PRIZE OF THE AZERBAIDZHAN S.S.R.

UNCLASSIFIED

USSR

UDC 591.1.15

GORKIN, V. Z., AKOPYAN, ZH. I., KULYGINA, A. A., and ZEYNAIOV, T. A.
"Disturbances of Deamination of Some Nitrogen Compounds and a Method of
Normalizing Them Experimentally"

Byul. eksperim. biol. i med. (Bulletin of Experimental Biology and Medicine),
1971, 72, No 11, pp 42-45 (English summary) (from RZh-Biologicheskaya Khimiya,
No 4, 25 Feb 72, Abstract No 4F1256 from summary)

Translation: White rats which had been x-irradiated (1000 rad dose) were
used in the experiments. Diminution of monoaminoxidase activity, accompanied
by the appearance of histamine and AMP deaminase activity, occurs in rat liver
mitochondria after irradiation or intraperitoneal injection of oxidized oleic
acid. Repeated injections of rats with adenosine-2'(3')-monophosphate result
in normalization of these disturbances of the deamination of nitrogen compounds.

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- 17 -

USSR

UDC 547.26'118.07

KULIYEV, A. M., ZEYNALOVA, G. A., KULIYEV, A. B., and RAGIMOVA, Sh. A.,
Institute of the Chemistry of Additives, Academy of Sciences, Azerbaydzhan
SSR, Baku

"Synthesis of the Phosphorous Acid Esters Containing Trichloromethyl Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1497-1498

Abstract: Esters of phosphorous acid containing the trichloroacetyl group
were synthesized by the reaction of hydroxyalkyltrichloroacetates with
ethylenechlorophosphite or catecholphosphorous acid chlorides.

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USSR

UDC 547.26:118.07

KULIYEV, A. M., ZEYNALOVA, G. A., KULIYEV, A. B., RAGIMOVA, SH. A.,
Institute of Chemistry Additives of Academy of Sciences AzerSSR

"Synthesis of Certain Phosphite Esters With Trichloromethyl Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,
pp 2209-2211

Abstract: In the search for antiwear additives to lubricating oils, β -trichloroacetoxyethyl- and γ -trichloroacetoxybutyl-phosphorous acid chlorides and dichlorides were synthesized by the reaction of β -hydroxyethyl- and γ -hydroxybutyl trichloroacetates with phosphorus trichloride. Also a series of P,P-dialkyl β -trichloroacetoxyethyl phosphites were prepared by the reaction of β -trichloroacetoxyethylphosphorous acid dichloride with aliphatic alcohols in the presence of pyridine. The structure of the synthesized compounds was determined by their IR spectra, two of which are shown. Physical constants and formulas of the compounds are tabulated and preparation procedures are described.

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1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHOSPHOSULFURIZATION O,O BISALKYLPHENYL PHOSPHORODITHIOATE
PRODUCTION IN CONTINUOUS PILOT APPARATUS -U-
AUTHOR-(G5)-GRUDZHEVA, I.M., ZEYNALOVA, G.A., PULATOVA, SH.:., NAMAZOV,
I.I., AGAUZHANOV, KH.S.
COUNTRY OF INFO--USSR
SOURCE--AZERB. NEFT. KROZ. 1970, (3), 35-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--LUBRICANT ADDITIVE, CHEMICAL SYNTHESIS, THIOL, PHOSPHATE
ESTER, BENZENE DERIVATIVE, ZINC OXIDE, BARIUM HYDROXIDE (U)VNINP354
LUBRICANT ADDITIVE, (U)VNINP350 LUBRICANT ADDITIVE, (U)VNINP360
LUBRICANT ADDITIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1797 STEP NO--UR/0487/70/000/003/0035/0037
CIRC ACCESSION NO--AP0135362
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135362

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKYLPHENOL (93.8 PARTS) AND 6.2 PARTS P SUB2 S SUB5 REACTED AT LESS THAN OR EQUAL TO 130DEGREES AND 1.33 KG PER HR PER L. REACTION VOL. TO GIVE 97PERCENT PRODUCT, WHICH WAS TREATED WITH ZNO AND BA(OH) SUB2 TO OBTAIN THE ADDITIVES VNII NP-354 AND 350, RESP., WHICH, MIXED IN RATIO 2:5, GAVE THE ADDITIVE VNII NP-360.

UNCLASSIFIED

Plant Pathology

USSR

UDC 632.931:633.11

ZEYNALOVA, Yu. D., Aspirant, Kazakh SSR Agricultural Institute

"Harvest Losses of Wheat Due to Yellow Rust"

Moscow, Zashchita Rasteniy, No 10, 1971, p 19

Abstract: A study was made of the factors which caused the actual harvest of spring wheat to fall below the expected harvest in the mountainous areas of southeastern Kazakhstan in 1969. It was discovered that losses caused by yellow rust, which is frequently made the scapegoat, were actually several hundred percent less than losses caused by frost and lodging of the grain. It was also established that early sowing of the wheat (at the beginning of May) resulted in a significantly higher yield because the grain was affected less by all three of the above factors.

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USSR

UDC 616.981.718-078.7-031:611.778

TERENT'YEV, V. F., and ZEYILENOK, M. A., Voronezh Medical Institute

"Significance of the Intradermal Allergic Test With Soluble Antigen From *Rickettsia burneti* to Epidemiological Studies of Q Fever Foci"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 70-74

Abstract: The toxicity and specificity of soluble Q fever antigen from *Rickettsia burneti*, when administered in the form of a skin allergy test, was compared with that of the CFR (complement-fixing reaction). Toxicity trials on 895 individuals proved that the skin test produced no undesirable local or general reactions. Tests on 60 individuals that had suffered Q fever 1.5 months to 5 years previously indicated that the skin test becomes more sensitive than CFR as the period after the illness increases. In general the skin test produced positive reactions among 50 of the 60 individuals while the CFR was positive in only 28 out of 56 cases. Specificity was determined by comparing results of skin tests on 150 patients with infectious illnesses other than Q fever with those on 237 residents of Voronezh, for which Q fever is not characteristic. The test was positive for only 4.0 percent of the patients and 3.4 percent of the residents. On the other hand tests on 697 individuals in areas for which Q-rickettsiosis is endemic were positive in 44.0 percent of the cases, while

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TERENT'YEV, V. F. and ZEYTLNOK, M. A., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 70-74

the CFR was positive among 20.0 percent of 439 individuals. Finally a comparison of the sensitivity of the two tests at a meat-processing combine, where Q-rickettsiosis is highly possible, revealed that the skin test was 3 times more sensitive than the CFR. Thus the high specificity and sensitivity of the skin test, simplicity of administration and observation, absence of toxic reactions, and possibilities for employment in the field recommend this test for studies of Q-rickettsiosis foci and for diagnosis.

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USSR

UDC 576.3:612.017:615.5

YABROV, A. A., YEKIMOVA, V. A., and ZEYTTLENOK, N. A.

"The Effect of Dibazole on Interferon Activity", pp 62-64, Sintez Belka i Rezistentnost' Kletok, (Protein Synthesis and Cell Resistance), Leningrad, "Nauka," 1971, 104 pp

Abstract: The results of this work indicate the stimulating effect of dibazole on the antiviral activity of the interferon inducer and of interferon in a culture of chick embryonic tissue.

USSR

VIL'NER, L. M., ZEYTLNOK, N. A., CHUMAKOV, M. P., KROPACHEV, V. A., and TRUKHMANOVA, L. B., Institute of Poliomyelitis and Viral Encephalitis, Academy of Medical Sciences USSR, Institute of High-Molecular-Weight Compounds, Academy of Sciences USSR

"Use of Synthetic Copolymers Derived From Vinylpyrrolidone for Interferon Induction and for Increasing Resistance to Viral Infections"

Riga, Fiziologicheskii i Opticheskii Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 137-144

Abstract: Antiviral and interferon-inducing activities of copolymers of vinylpyrrolidone (VP) with crotonic acid (CA), crotonic aldehyde (CAL), and maleic anhydride (MA) were studied. Interferon activity was determined by intraperitoneal injection of mice with 0.5 ml. of copolymers of different concentration, followed by blood serum analysis. Analysis results showed that interferon titers were <16, 16, 32-24, 42, 128-155 for VP with CA; and <16, <16, 48, not determined, 188-252 for VP with MA 2, 4, 6, 8, and 24 hrs, respectively, after injection. Effectiveness of these copolymers was high if they were administered to mice prior to infection with tickborne encephalitis virus. However, all of them were ineffective if given to mice 24 hr after infection. Injection of a large group of mice infected with low doses

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USSR

VIL'NER, L. M., et al., Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 137-144

of tickborne encephalitis virus with less than 100 LD₅₀ dose of copolymers tested showed that VP with CA (No 20) and VP with MA (No 2) possessed high antiviral activity (95 and 60% of mice survived). This means that copolymers with polyanionic structure were the most effective. With respect to mol. wt. the most active copolymers were those with $50 \div 200,000$ mol. wt. and with characteristic viscosity of $\sim 0.24-0.5$ in 0.02 N HCl. Thus, in the case of VP with CA and MA a possibility was established of inducing interferon-production in animal blood by chemical means. Results were negative with chicken embryos and with cell cultures of chicken and mouse embryos.

2/2

- 86 -

USSR

UDC 581.1.039

BIDZILIYA, N. I., and ~~ZEZINA, N. V.~~, Institute of Plant Physiology, Academy of Sciences Ukrainian SSR, Kiev

"Isolation of Plant Melanins and a Study of Their Radiation-Protective Properties"

Kiev, Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 3, No 1, Jan/Feb 71, pp 55-60

Abstract: The melanins of the skin of *Vicia faba* beans were extracted with hot water (fraction 1) and an 0.5 N solution of NaOH (fraction 2). Both fractions were characterized by means of spectra in the visible and UV ranges, IR spectra, and EPR spectra. Treatment of white mustard (*Sinapis alba*) seeds by vacuum infiltration with solutions of melanins of fraction 1 in concentrations of 0.01, 0.02, and 0.03% followed by irradiation of the seeds with gamma rays in doses of 150 and 200 krad indicated that the melanins had a pronounced radiation-protective effect as shown by the rate of seed germination, increase in the height of seedlings, and content of dry matter in seedlings vs. those for controls. The maximum protective effect was exerted by the 0.02% solution. The EPR spectra showed that the melanins were paramagnetic to a considerable degree. One may assume that the protective effect exerted by them was due to binding of free radicals that were formed under the effect of gamma-irradiation.

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USSR

UDC 59(093.32) : 591.9(265)

BEKKER, V. E., ~~ZEZINA, C. N.~~, LEVENSHTAYN, R. Ya., and MEL'NIKOV, I. A.,
Institute of Oceanology, Academy of Sciences, USSR

"Zoological Studies During the 48th Voyage of the Scientific Research Ship
Vityaz in the Central Part of the Pacific Ocean"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 6, Jun 71, pp 955-957

Abstract: A study was made of oceanic and ocean floor fauna of the Pacific Ocean over the Milwaukee banks, at Fiji, Tonga, Rarotonga, Auckland, Curtis Island, Penryn Atoll, and Honolulu. Two hundred and ten takes yielded 115 species belonging to 74 genera and 46 families, including some very rare specimens. Data were obtained on fishing grounds for blue fin and Pterolamiops longimanus sharks. Most numerous in the collections were flying fish of the Exocoetidae family and phosphorescent anchovies of the Myctophidae family (including the *Diaphus regani* caught at 18°1' southern latitude and 176°43' eastern longitude, which had previously been classified among the west-equatorial species). Hatchlings and fingerlings of *Exocoetus* sp., *Hirundichthys*, and others were encountered on the surface of the water only during daytime, with fewer of their longer specimens caught during daytime, and still

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USSR

BEKKER, V. E., et al., Zoologicheskii Zhurnal, Vol 50, No 6, Jun 71, pp 955-957

larger ones -- only at night. The greatest abundance of fingerlings was found in the regions where the northern and southern tropical currents meet, and the poorest catches were in equatorial waters. Sea bottom investigations in the low-productivity oligotrophic areas of the Pacific Ocean confirmed the general sparseness of fauna, with a predominance of Foraminifera, small glass sponges, Scyphozoa, and Serpulidae. A general similarity of the fauna of the Tonga and Kermadec trough was revealed, with several live species found in the Tonga basin for the first time. Biochemical investigations and quantitative analyses of easily assimilated organic substance of the superficial layer of deep-water sediment were also done.

2/2

- 12 -

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EFFECT OF THE PARAMAGNETISM OF CONJUGATED POLYMERS AND THEIR
COMPLEXES ON NMR SPECTRA AND MACROMOLECULAR MOTION --U-
AUTHOR--(05)--MAKLAKOV, A.I., SHEPELEV, V.I., GOLDGAMMER, K.A., ZGADZAY,
E.A., TARASOV, B.G.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 394-400
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--PARAMAGNETISM, CONJUGATED POLYMER, COMPLEX COMPOUND,
MACROMOLECULE, SCHIFF BASE, PYRIDINE COMPLEX, ACETYLENE, ELECTRON SPIN,
NMR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0251 STEP NO--UR/0459/70/012/002/0394/0400
CIRC ACCESSION NO--AP0106907
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA WERE OBTAINED FOR
POLY(SHIFF BASES) (I) CONTG. :CHCH:NRN: (R EQUALS PYRIDINEDIYL) GROUPS,
I COMPLEXES WITH BR, POLY(PHENYLACETYLENE) (II), AND II COMPLEXES WITH
IODINE AT 77-330DEGREES K. ELECTRON SPIN LATTICE RELAXATION TEMP.
DEPENDENCE WAS OBSD. THE CONDITIONS WERE DETD. UNDER WHICH THE
PARAMAGNETIC CENTERS PRESENT IN THESE POLYMERS MAY HAVE AN EFFECT ON THE
2ND MOMENT OF NMR ABSORPTION LINES. AN ANOMALOUS EFFECT OF HALOGENS ON
THE MOL. MOBILITY OF I AND II WAS OBSD.

UNCLASSIFIED

USSR

UDC 677.494.745.32-96.021.12

ZGIBNEVA, Zh. A., GELLER, A. A., GELLER, B. E., AHUNOVA, B. A., YUNUSOV, B. H., Tashkent Institute of Textile and Light Industry

"Modifications of Polyacrylonitrile Fibers With Organophosphorus Compounds"

Moscow, Khimicheskiye Volokna, No 6, 1973, pp 51-52.

Abstract: Dimethyloxy-2,2,2-trichloro-1-hydroxyethylphosphonate (chlorophos) was used to treat a polyacrylonitrile fiber (92.2% acrylonitrile, 6.3% methyl acrylate). It was found that the amount of phosphorus adsorbed by the fiber followed a Langmuir curve, and that the limit of saturation of the fiber is determined by the size of the active internal surface of the fiber. Fiber treated with chlorophos was found to be less flammable, to have a lower glass transition temperature, lower coefficient of internal stress, a higher thermal index, and to show more antimicrobial activity than the unmodified fiber. At temperatures up to 100°C, chlorophos acted to plasticize the fiber. The physico-mechanical properties of the fiber remained essentially unchanged by treatment with chlorophos.

USSR

UDC 677.494.745.32-96.004.14:661.183.123.2

ZGIBNEVA, Zh. A., GELLER, A. A., GELLER, B. E., POLOVNIKOVA, M. V.,
YERESHCHENKO, A. G., and GHOMENKO, R. I., Tashkent Institute of Textiles
and Light Industry

"Fibrous Cation Exchange Materials Based on Nitrona"

Moscow, Khimicheskiye Volokna, No 5, 1973, pp 7-9

Abstract: The high chemical stability of the hydrocarbon chains of polyacrylonitrile and the high reactivity of the nitrile groups may be used to prepare ion exchange materials based on the polymers and copolymers of acrylonitrile fibers. The reaction is base catalyzed. Temperature and concentration were determined which would optimize the physical mechanical properties of the obtained fibers. The ion-exchange capacity ranged from 0.3 to 3 meq/g, the higher values generally occurring at high temperatures or high concentrations of NaOH. Intense chemical modification in the polymer chain occurred during the saponification process. These changes were examined using IR spectra and thermograms. The principal reaction path for the base saponification of the copolymer was the hydrolysis of the nitrile and the mixed-ester groups.

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- 11 -

1/2 018 UNCLASSIFIED
TITLE--VALVES OF THE HUMAN AZYGOS VEIN -U-

PROCESSING DATE--30OCT70

AUTHOR--ZGRIVETS, S.G.

2

COUNTRY OF INFO--USSR

SOURCE--ARKH ANAT GISTOL EMBRIOL 58(2): 79-82. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD VESSEL, PALATE, VALVE, ANATOMY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1082

STEP NO--UR/9076/70/058/002/0079/0082

CIRC ACCESSION NO--AP0128509

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0128509
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. VALVES IN THE AZYGOS VEIN WERE REVEALED IN 71.87PERCENT OF THE 96 CASES STUDIED. VALVES PROVED HIGHLY VARIABLE, 1, 2, 3, 4 VALVULAR STRUCTURES BEING FOUND. A SINGLE VALVE OCCURRED IN 84.06PERCENT, 2 IN 11.06PERCENT, 3 IN 2.90PERCENT AND 4 IN 1.44PERCENT OF THE CASES. IN 1.72PERCENT VALVES WERE LOCATED IN THE ASCENDING PART OF THE VEIN; IN 17.25PERCENT, AT ITS CURVATURE, AND IN 81.03PERCENT, IN THE ARCH. THE BREADTH OF VALVULES RANGED BETWEEN 5 AND 17 MM, AND THEIR HEIGHT, BETWEEN 4 AND 8 MM, DEPENDING ON THE TYPE OF VALVE: THE FEWER VALVULES FORMED THE VALVE, THE GREATER WAS ITS BREADTH, AND VICE VERSA.

UNCLASSIFIED

USSR

UDC 669.046.5

KHARITONOV, A. S., ZGUR'EV, I. I., MASLOVA, Yu. N., BUKINA, A. F., and
BARANOVA, V. G.

"Out-of-Furnace Liquid Steel Degassing by Powder-Like Materials"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISI) (Collection of
Works, Modern Problems of Steel Quality) (Moscow Institute of Steel and
Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 266-267

Translation of Abstract: Data are presented on liquid steel treatment by
solid powder-like materials whose boiling temperature is lower than that of
steel. Characteristics of the degassing agent (sodium chloride), of the
treated 20L steel, melted in a basic 5-ton arc furnace, and of the pre-dried
gas carrier (carbon dioxide) are presented. The degree of degassing (47%)
with a 1.5 kg/ton sodium chloride consumption is indicated. Consideration is
given to the reduction of nonmetallic inclusions and to the improvement of
plastic properties in metal refining by sodium chloride. 4 tables.

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- 42 -

1/2 015
UNCLASSIFIED
TITLE--CHLOROPHYLL CONTENT AND THE RATE OF CELL DIVISION IN SOME ALGAE
PROCESSING DATE--04DEC70
DEPENDING ON THE PROVISION OF NUTRIENT MEDIA WITH PHOSPHORUS -U-
AUTHOR--ZGUROVSKAYA, L.N.
COUNTRY OF INFO--USSR
SOURCE--KIEV, GIDROBIOLOGICHESKIY ZHURNAL, VOL 6, NO 1, 1970, PP 51-56.
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ALGAE, CHLOROPHYLL, PHOSPHORUS, NUTRITION, PLANT GROWTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605014/007 STEP NO--UR/0474/70/006/001/0051/0056
CIRC ACCESSION NO--AP0140497
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140497
ABSTRACT/EXTRACT--(U) GP-G-

ABSTRACT. THE DIATOM SKELETONEMA CONSTATUM AND THE DIONFLAGELLATES PROROCENTRUM MICANS AND GYMNODINUM WULFFII WERE GROWN ON ALLEN NELSON MEDIUM WITH 10 MG-1 OF N, NO SUB3 AND VARIABLE CONTENT OF P (0.001-10 MG P-1 FROM NA SUB2 HPO SUB4). THE RATE OF CELL DIVISION AND THE CHLOROPHYLL CONTENT IN SIMILAR CELLS WERE DETERMINED. IT WAS FOUND THAT THE RATE OF CELL DIVISION WAS HIGHEST IN MEDIA WITH 5 AND 1 MGP-1, AND THE CHLOROPHYLL CONTENT WAS HIGHEST IN MEDIA WITH 5 MGP-1. DEVIATIONS OF THE P CONTENT FROM THESE CONCENTRATIONS LED TO DECREASE IN THE RATE OF CELL DIVISION AND DECREASE OF THE CHLOROPHYLL CONTENT. FACILITY: KARADAG DEPARTMENT, INSTITUTE OF BIOLOGY OF THE SOUTHERN SEAS, ACADEMY OF SCIENCES, UKRAINIAN SSR.

UNCLASSIFIED

USSR

ZGUROVSKAYA, L. N., Karadag Department, Institute of Biology of the Southern Seas, Academy of Sciences, Ukrainian SSR

"Chlorophyll Content and the Rate of Cell Division in Some Algae Depending on the Provision of Nutrient Media with Phosphorus"

Kiev, Gidrobiologicheskii Zhurnal, Vol 6, No 1, 1970, pp 50-56

Abstract: The diatom *Skeletonema costatum* and the dinoflagellates *Prorocentrum micans* and *Gymnodinium wulffii* were grown on Allen-Nelson medium with 10 mg/l of N-NO₃ and variable content of P (0.001-10 mg P/l from Na₂HPO₄). The rate of cell division and the chlorophyll content in similar cells were determined. It was found that the rate of cell division was highest in media with 5 and 1 mgP/l, and the chlorophyll content was highest in media with 5 mgP/l. Deviations of the P-content from these concentrations led to decrease in the rate of cell division and decrease of the chlorophyll content.

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- 21 -

USSR

UDC 621.357

ZGURSKIY, V. A.

"Means of Specialization of Galvanic Production"

Tekhnol. i Organiz. Proiz-va, Nauch-proizv. sb. [Technology and Organization of Production, Scientific and Production Collection], No 5, 1971, pp 17-19, (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L342 by Ye. I. Khrushcheva).

Translation: In order to increase the economic effectiveness of galvanic production, it is suggested that a specialized galvanic enterprise be created, to serve a union or group of enterprises located in a single industrial center or economic region. The need for creation of specialized enterprises is dictated by the system of concentration of industrial production in large centers. A formula is suggested for determination of the total economic effect to be achieved by taking steps for the concentration of galvanic production. The economic effect of a specialized galvanic enterprise serving eight individual enterprises in an economic region with a radius of 50 km and an annual consumption of galvanic coatings with a total area of 440,000 m², calculated by this formula, is 348,800 rubles.

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- 35 -

Acc. Nr:

AP0049662

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:

4R0039

96041z Polarographic study of aliphatic diisocyanates.
Shapoval, G. S.; Lipatova, T. E.; Zhabenko, V. A.; Sheinina,
L. S.; Morozov, M. A.; Lagutin, M. A. (Inst. Khim. Vysoko-
mol. Soedin., Kiev, USSR). *Zh. Obshch. Khim.* 1970, 40(1),
25-8 (Russ). Polarographic data were reported for $(CH_2)_n$ -
(NCO) $_2$ with $n = 4, 6, 7, 8, 9, 10$. The half-wave potential
showed a relation to the above structure by gradual extinction of
the mutual inductive effect of the NCO groups as the value of n
increased. These potential values were indicative of the overall
reactivity of the diisocyanates in such reactions as polyurethane
formation and hence represent useful industrial value. The
following half-wave potentials were reported (n, V given): 4,
1.93; 5, 2.12; 6, 2.18; 7, 2.23; 8, 2.235; 9, 2.24; and 10, 2.25.
The measurements were made relative to the Hg anode by using
AcNMe $_3$ solvent and Et $_3$ Nl electrode at 25°. G. M. Kosolapoff

REEL/FRAME
19801561

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USSR

UDC 615.285.7-099-07

ZHABIN, V. A., and LITVISHCHENKO, F. I., Moscow

"Case of Chlorophos Intoxication"

Kiev, Vrachebnoye Delo, Vol 53, No 3, pp 143-144

Abstract: A case of chlorophos intoxication caused by ingesting a third of a glass of the preparation in 200 g of water is described. Within 10-12 min after intake, acute asthenia and a blue haze before the eyes developed, followed by loss of consciousness. The woman patient was hospitalized. Consciousness was regained within seven hours, with the patient complaining of extreme weakness and severe pains in the leg muscles. Her condition became aggravated on the next day by deep depression, constant fear of death, and occasional mental incoherence. By the sixth day the patient's condition began to improve, and on the 12th day she was discharged from the hospital. A few days after her discharge from the hospital the patient began to develop neurological symptoms, and after an examination was again hospitalized and placed in a neurological section. Treatment consisted of injections of vitamins B₁ and B₁₂, proserine and adenosine triphosphate intramuscularly, nicotinic acid, dibazol, massage, diathermy, and therapeutic exercises. Improvement began on the ninth day; on the 12th day after the second hospitalization the patient was again discharged from the hospital. Polyneuritis in the case was

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USSR

ZHABIN, V. A., and LITVISHCHENKO, F. I., Moscow

apparently due to the direct effect of the chlorophos on the peripheral nervous system.

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- 71 -

USSR

UDC 621.316:65.012.122

MAMEDYAROV, O. S., ZHABINSKIY, YU. V., ISMAYLOVA, T. A.

"Application of the Method of Experimental Planning for Optimizing the Operating conditions of Electric Power Distribution Systems"

Tekh. tereggi ugrunda, Za tekhn. progress (For Technical Progress), 1970, No 11, pp 12-14 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 291)

Translation: For the standard distribution network, the problem of insuring minimum active power losses consists in determining the location and power of the reactive power losses when defining the feed voltage regulation laws. Restrictions are given in the form of tolerances of voltage deviations from the rated voltage at the buses of all the consumers. There are 2 illustrations and a 2-entry bibliography. [Azerbaydzhan Scientific Research Institute of Power Engineering, Baku]

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- 129 -

1/2 022
TITLE—USE OF POLYACRYLAMIDE FOR THE GRANULATION OF PESTICIDES —U—
AUTHOR—(02)—ZHABITSKIY, P.F., MUSICH, V.N.
COUNTRY OF INFO—USSR
SOURCE—KHIM. PROM. UKR. 1970, (1), 19
DATE PUBLISHED—70
PROCESSING DATE—30OCT70
UNCLASSIFIED
Z
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE
TOPIC TAGS—PESTICIDE, POLYACRYLAMIDE RESIN, FERTILIZER, GRAIN SIZE, UREA,
AMMONIUM NITRATE
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/1362
CIRC ACCESSION NO—AP0125010
STEP NO—UR/0436/70/000/001/0019/0019
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 022

CIRC ACCESSION NO--AP0125010

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE BLENDING OF 100 PARTS SAND OR POWD. SLAG WITH 2 PARTS 1PERCENT POLYACRYLAMIDE (I) SOLN. GAVE GRANULES COATED WITH A THIN I FILM. THE BLENDING OF 100 PARTS OF THESE GRANULES WITH 25 PARTS POWD. PESTICIDE AND 5 PARTS POWD. GYPSUM GAVE GRANULES 1.3-1.5 MM IN DIAM. EACH COATED WITH I AND PESTICIDE. SIMILARLY SUPERPHOSPHATE, UREA, OR (NH SUB4)NO SUB3 GRANULES WERE COATED WITH A SUSPENSION OF 3-4 KG PESTICIDE IN 0.2PERCENT AQ. I SOLN. AND DRIED TO GIVE PESTICIDE FERTILIZER MIXTS. FACILITY: INST. FIZIOL. RAST., KIEV, USSR.

UNCLASSIFIED

1/2 021
TITLE--A NONLINEAR CERAMIC DIELECTRIC -U-
UNCLASSIFIED
PROCESSING DATE--16OCT70
AUTHOR--(05)-DIOKOVSKAYA, O.S., ZHABKINA, G.I., BRONNIKOV, A.N., SHVORNEVA,
L.I., KLIMOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 262,201
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--PATENT, CERAMIC DIELECTRIC, NONLINEAR SYSTEM, LEAD, TITANATE,
STRONTIUM, ZINC OXIDE, CALCIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1784
CIRC ACCESSION NO--AA0109745
STEP NO--UR/0402/70/000/000/0000/0000
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0109745

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM OTDRYTIYA, IZOBRET., PROM.
OBHAZTSY, TOVARNYE ZNAKI 1970, 47(6), 42. THE TITLE DIELEC. CONTAINS A
SOLID SOLN. OF A PB TITANATE AND SR TITANATE, 1-30 MOLE PERCENT ZN OXIDE
(OR TITANATE) AND SMALLER THAN 45 MOLE PERCENT CA TITANATE.

UNCLASSIFIED

Z Molecular Biology

USSR

DESHCHEREVSKIY, V.I., ZHABOTINSKIY, A.M., SEL'KOV, YE.YE., SIDORENKO, N.P.,
and SHNOL', S.E., Institute of Biophysics, Academy of Sciences USSR

"Oscillating Biological Processes on the Molecular Level"

Moscow, Biofizika, Vol15, No 2, 1970, pp 225-234

Abstract: One important task of modern biophysics is to investigate conditions under which oscillations may occur on various levels. Some oscillations represent a normal functional state of a system (myocardial fibers), while other oscillations represent an abnormal (pathological) state. Oscillating processes have been investigated in single-enzyme, multi-enzyme, and model catalytic systems, in colloidal systems, and in a system with a strict structural organization: striated muscle. A catalytic reaction is a repetitive cyclic process: each enzyme molecule forms a complex with the substrate, induces a reaction, and returns to its initial state. Solutions of actomyosin display configurational oscillations involving reversible shifts in the ATPase activity in the absence of the ATP, which arrests these oscillations. Multi-enzyme systems in cells involve hundreds of biochemical reactions and various control mechanisms, which regulate the activity of enzymes, the speed of their synthesis and destruction, the permeability of biological membranes, and so on. These mechanisms can also disrupt the equilibrium

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USSR

DESHCHEREVSKIY, V.I., et al, Biofizika, Vol 15, No 2, 1970, pp 225-234

of biochemical systems and cause fluctuations in the concentration of reacting substances. Liquid-phase models of enzymatic reactions yield reproducible results and are used to investigate the spatial synchronization of oscillations. A specific situation arises in mechanical chemistry: the enzymatic breakdown of ATP changes the mechanical state of the muscle, which in turn affects the speed of this reaction. Further studies of oscillating processes may contribute to our understanding of the following phenomena: the mechanism of enzymatic catalysis; the nature of control mechanisms in multi-enzyme systems; the molecular kinetic basis of biological motility; and the cause of morphological organization in initially homogeneous systems.

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32

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CONCENTRATION WAVE PROPAGATION IN TWO DIMENSIONAL LIQUID PHASE
SELFOSCILLATING SYSTEM -U-
AUTHOR--(02)-ZAIKIN, A.N., ZHABOTINSKIY, A.M.
COUNTRY OF INFO--USSR
SOURCE--NATURE (LONDON) 1970, 225(5232), 535-7
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--BRCMATE, MALONIC ACID, CATALYST, OXIDATION, WAVE PROPAGATION,
REDOX REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/1348

STEP NO--UK/0000/70/225/000/0535/0537

CIRC ACCESSION NO--AP0100011

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APO100011

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A STUDY ON OSCILLATING CHEM. REACTIONS IN THE SYSTEM BROMATE BROMOMALONIC ACID FERROIN (INDICATOR AND CATALYST) WAS MADE. THE REACTION WAS CARRIED OUT IN A THIN LAYER OF SOLN. AT 20DEGREES. PHOTOGRAPHS WERE TAKEN AT 1 MIN INTERVALS. IN THE 1ST PHOTOGRAPH, THE CATALYST IS COMPLETELY REDUCED, AND SUBSEQUENT PHOTOGRAPHS SHOW IT STARTING TO BE OXIDIZED AT PARTICULAR POINTS (LEADING POINTS) FROM WHICH CIRCULAR WAVES OF OXIDN. ARE PROPAGATED. THE 4TH PHOTOGRAPH SHOWS OXIDN. TAKING PLACE IN AREAS NOT REACHED BY THESE WAVES. THE NEXT PHOTOGRAPHS SHOW WAVES COMING FROM LEADING CENTERS OXIDIZING ALL THE SPACE STEP BY STEP. RADIAL SYM. PATTERNS ARE ALSO OBSD. THE OBSD. PHENOMENON IS CHARACTERIZED BY THE OCCURRENCE OF PROGRESSIVE CONCEN. WAVES AND BY A SPACE STRUCTURE SUPPORTED AT THE EXPENSE OF REDOX REACTION ENERGY. A MODEL FOR THE WAVE PROPAGATION IS PROPOSED.

UNCLASSIFIED

USSR

UDC: 621.375.7

ZHABOTINSKIY, M. Ye. (Reviewer)

Kvantovyye Usiliteli SVCh (Mazery) [Quantum Microwave Amplifiers (Masers)]
by V. B. Shteynshleyger, G. S. Mizezhnikov and P. S. Lifanov, published by
"Sovetskoye Radio", 1971, 432 pp

Moscow, RadioTekhnika i Elektronika, Vol 17, No 9, Sep 72, p 2001

Abstract: The book combines an exposition of maser physics with the engineering theory of masers. Important information is given not only on paramagnetic crystals, cavity resonators and decelerating systems, but also on special magnets with superconductive windings, low-temperature ferrites, cryostats, closed-cycle refrigeration equipment for helium and intermediate temperatures, etc. The book is written for specialists involved in the development and use of low-power microwave amplifiers. Therefore the main part of the work is devoted to calculations of masers and their components, combining masers with antenna systems, and measurement of the principal characteristics of masers. The book also contains important data on the physics of paramagnetic phenomena, electrodynamics and statistical radio physics. There is no index.

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USSR

UDC 546.661

GAYDUK, M. I., GILYAROV, O. N., ZHABOTINSKIY, M. YE., ZOLIN, V. F.,
KROTOVA, L.V. (DECEASED) KULIKOVSKIY, B. N., LEBEDEV, V. G., and
ELLERT, G. V., Institute of General and Inorganic Chemistry imeni N.
S. Kurnakov, Academy of Sciences USSR

"Luminescence Centers in Solutions of Rare Earth Elements in Phospho-
rus and Selenium Oxychlorides at 77° K"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy,
Vol 6, No 7, Jul 70, pp 1276-1280

Abstract: The article considers the dependence of the relative con-
centrations of luminescence centers on the composition and conditions
for the preparation of europium solutions in phosphorus and selenium
oxychlorides with tin tetrachloride. The luminescence spectra of the
isolated centers are analyzed on the basis of crystal field theory.

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- 23 -

Acc. Nr.

AA0034466

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code

UK 0000

73098; Glass for laser generators and laser amplifiers. Buzhinskii, I. M.; Zhabotinskii, M. E.; Rudnitskii, Yu. P.; Tsapkin, V. V.; Tsapkina, I. V.; El'sht, G. V. (Institute of Radio Engineering and Electronics, Academy of Sciences, U.S.S.R.) Brit. 1,177,731 (Cl. C 09k), 14 Jan 1970, Appl. 01 Jan 1968; 5 pp. A laser generator or amplifier glass is described which is composed of 1 or more alkali metal oxides, Nd oxide, 20 to 90% by wt. P_2O_5 , and an additive consisting of an Al halide and/or a Sn halide. The total wt. percentage of the additive is ≤ 20 . To illustrate, a glass is obtained from an original stock composed of a mixt. of finely crushed $LiPO_3$, 39, $NaPO_3$, 46, $AlPO_3$, 7, AlF_3 , 4.7, and Nd_2O_3 , 3.3% by wt. by melting in a quartz crucible at 850 to 1056° during 3 to 6 hr and under const. stirring with a quartz agitator. Discharge of finished glass and its annealing are carried out in accordance with the production techniques usually adopted in the silicate-glass manufacturing art. The product, capable of emitting light energy on the 1060 nm wavelength, is composed of Li_2O 8.2, Na_2O 17, Al_2O_3 4.0, AlF_3 7.7, P_2O_5 60, and Nd_2O_3 3.1%. Its specific wt. is 2.52 g/cm³ and n 1.524. The spectral-luminescent characteristics of the glass are: half-width of the luminescent band at 1060 nm ~ 16 nm; life-

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time of Nd^{3+} when excited 250×10^{-8} sec; quantum yield of luminescent energy at 1060 nm, 0.4 ± 0.05 ; inactive absorption at 1060 nm $> 10^{-3} \text{ cm}^{-1}$. The generation threshold of a light quantum generator employing the proposed material is substantially lower than in the case of silicate glass. The spectrum of a laser based on phosphate glass is practically independent of the pumping level equalling 6 Å in a strip-line resonator and 3 Å in a spherical-cavity resonator. The above-described method of obtaining the glass allows emission at 1060 nm for pumping sources at 7000°K.

Ramona Mayer

19711141

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RADIATION CATALYTIC ACTIVITY OF DIAMOND AND GRAPHITE -U-

AUTHOR--(05)-VLADIMIROVA, V.I., ZHABROVA, G.M., KADENATSI, B.M.,
KRIVENKOVA, P.G., BUTUZOV, V.P.
COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 182-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, EARTH SCIENCES
AND OCEANOGRAPHY

TOPIC TAGS--CATALYST ACTIVITY, DIAMOND, GRAPHITE, METHANOL, GAMMA
RADIATION, FORMALDEHYDE, ETHYLENE GLYCOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0748

STEP NO--UR/0456/70/004/002/0182/0183

CIRC ACCESSION NO--AP0119655

UNCLASSIFIED

272 031

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119655

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. DIAMOND AND GRAPHITE WERE STUDIED TO DET. THEIR ACTIVITY IN DIFFERENT ELECTRONIC CONFIGURATIONS. SYNTHETIC AND NATURAL DIAMONDS WERE USED. THE SURFACE OF ALL SAMPLES WAS INCREASED BY VIBRATION GRINDING. THE SAMPLES WERE PURIFIED WITH HCL AND DRIED AT 120DEGREES. THE RADIATION CATALYTIC ACTIVITY WAS DETD. BASED ON THE TRANSFORMATION OF MEQH TAKING PLACE IN AN ABSORBED LAYER AT ROOM TEMP. THE SAMPLES WERE DEGASSED AT 400DEGREES AND MEQH VAPORS WERE ADSORBED ON THEM BY COOLING THEM TO ROOM TEMP. THEN THE SAMPLES WERE IRRADIATED WITH PRIME60 CO GAMMA RAYS, AND THE PRINCIPAL PRODUCTS FORMED WERE CH SUB2 O AND ETHYLENE GLYCOL. THE TOTAL PRODUCTS FORMED EXCEEDED BY A FACTOR OF 100 THE TOTAL OBTAINED BY THE HOMOGENEOUS RADIOLYSIS OF MEQH. THUS DIAMONDS WITH A WIDTH OF THE FORBIDDEN BAND OF 7 EV TRANSFER ENERGY WELL. NO DIFFERENCE IN ACTIVITY WAS FOUND BETWEEN SYNTHETIC AND NATURAL DIAMONDS. GRAPHITE DID NOT TRANSFER THE ABSORBED ENERGY. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--THE TREATMENT OF EARLY CARDIAC INSUFFICIENCY IN HYPERTENSIVE
VASCULAR DISEASE -U-

AUTHOR--(C2)--YANGVSKIY, G.V., ZHADAN, I.N.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 104-108

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSION, CORONARY BLOOD CIRCULATION, CARDIOVASCULAR DRUG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3C04/0744

STEP NO--UR/0497/70/048/004/0104/0108

CIRC ACCESSION NO--AP0131339

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131339

ABSTRACT/EXTRACT--(U) CP-C-

ABSTRACT.

IN ORDER TO ASCERTAIN WHETHER EFFECTIVE HYPOTENSIVE THERAPY IS CONDUCTIVE TO THE ELIMINATION OF EARLY CARDIAC INSUFFICIENCY IN HYPERTENSIVE VASCULAR DISEASE IN 67 PATIENTS WITH THE SECOND AND THIRD STAGE OF THE AFFECTION THE AUTHORS STUDIED THE DYNAMICS OF ESOPHAGOGASTROGRAM AND PHASE INDICES OF THE LEFT VENTRICLE SYSTOLE. IT WAS ESTABLISHED THAT REDUCTION OF THE ARTERIAL PRESSURE IS ACCOMPANIED BY NORMALIZATION OF THE MYOCARDIAL CONTRACTILE FUNCTION ONLY IN PATIENTS WITH A NONPERSISTENT RISE OF THE ARTERIAL PRESSURE. IN PATIENTS WITH THE II B AND III A STAGES PROTRACTEDLY RECEIVING RELATIVELY LARGE DOSES OF ISOBARINE, NOTWITHSTANDING THE OBVIOUS DECLINE OF THE ARTERIAL PRESSURE, SIGNS OF LATENT CARDIAC INSUFFICIENCY REMAIN OR EVEN INTENSIFY. FOR THEIR ELIMINATION IT IS EXPEDIENT TO ADMINISTER ADDITIONALLY SMALL DOSES OF ISOLANIDE OF DIGOXINE. FACILITY: KIEV. N-1 INSTITUT KLINICHESKOY MEDITSINY IM. N. D. STRAZHESKO.

UNCLASSIFIED

USSR

UDC 669.15.018.8:620.196.2

KOKIN, S. D., ZHADAN, T. A., and GULYAYEV, A. P.

"Ferritic Steel Susceptibility to Intercrystalline Corrosion and Embrittlement"

Dokl. XXX Nauchno-tekhn. konferentsii. Mosk. in-t khim. mashinostr (Papers Presented at Thirtieth Scientific and Technical Conference of Moscow Institute of Chemical Machinery), Vol 2, vyp. 1, Moscow, 1970, pp 115-118 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31581 by V. Olenicheva)

Translation: On the basis of intercrystalline corrosion (IC) susceptibility tests, hardness measurements, and metallographic analysis, a temperature-time dependence range of IC susceptibility is constructed for OKh17T, Kh25T, and Kh28 steels, as well as the steel group with ~17% Cr and varying content of C (0.03-0.09%) and Ti (0.51-0.65%). The degree of Cr alloying affects the mechanical characteristics of the steels. At the same temperatures and with the same holding periods Kh25T and Kh28 steels have greater hardness and strength than OKh17T steel. C and Ti content, as well as grain size, greatly affect the onset of IC and embrittlement susceptibility. Steel with a low C content (0.03%) is not prone to embrittlement. The IC susceptibility of ferritic steels disappears on repeated heating. One illustration. Bibliography with Two titles.

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USSR

UDC 669.15.018.8

ZHADAN, T. A.

"Effect of Molybdenum on Properties of Ferritic-Austenitic Chromium-Manganese-Nickel Steels"

Sb. tr. TsNII Chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 76-82 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I587 by authors)

Translation: A study is made of the effect of Mo (1-3%) on the structure and properties of brand OKh18G8N2T economically alloyed (nickel) steel, of the ferritic-austenitic class, which is being introduced into the chemical industry. Increase in Mo content ~2% affects the relation between the structural components of steel, and this leads to a rise in strength properties of steel and a lowering of plastic properties; at the same time it intensifies embrittlement susceptibility of steel and negligibly affects total corrosion resistance. Steel containing 2% Mo (conventional designation OKh18G8B2M2) possesses the best combination of mechanical and anticorrosion properties. Five illustrations. Two tables. Bibliography with five titles.

1/1

USSR

UDC 669.15.018.8:669.782

ZHADAN, T. A., and BABAKOV, A. A.

"Effect of Silicon on Structure and Properties of Chromium-Nickel Steels of Kh20N20 and Kh15N20 Type"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 82-86 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31594 by authors)

Translation: Kh15N20 steel with the addition of up to 6% Si and Kh20N20 steel with up to 5% Si possess homogeneous austenitic structure and stable properties. The more homogeneous the steel structure, the less is their embrittlement susceptibility. The authors establish the temperature-time embrittlement range of high-silicon steels, as well as the nature and composition of embrittlement-inducing excess phase. One illustration. Two tables. Bibliography with three titles.

1/1

- 12 -

USSR

UDC:669.1.017.14.018:84

ZHADAN, T. A.

"Influence of Molybdenum on the Properties of Ferritic-Austenitic Chrome-Manganese-Nickel Steels"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 76-82

Translation: Results are presented from a study of the influence of molybdenum (1-3%) on the structure and properties of type OKh18G8H2T nickel ferritic-austenitic steel, used in the chemical industry.

An increase in the content of molybdenum to over 2% significantly influences the relationship of structural components of the steel, leading to an increase in strength and decrease in ductility, and also increases the tendency of the steel to embrittlement, and influences corrosion resistance slightly.

The best combination of mechanical and anticorrosion properties is that of the steel containing 2% Mo (type OKh18G8N2M2). 5 figures; 2 tables; 5 biblio. refs.

1/1

- 62 -

USSR

UDC 669.1.017.15'24'26-194

ZHADAN, T. A., and BABAKOV, A. A.

"Influence of Silicon on the Structure and Properties of Kh20N20 and Kh15N20
Chrome-Nickel Steels"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 82-86

Translation: A homogeneous austenitic structure and stable properties are characteristic of Kh15N20 steel with up to 6% Si and Kh20N20 steel with up to 5% Si. The more homogeneous the structure of the steels, the less tendency they show to embrittlement. The temperature-time intervals of embrittlement of high-silicon steels and the nature and composition of the excess phase causing embrittlement are determined. 1 figure ; 2 tables; 3 biblio. refs.

1/1

- 50 -

Steels

USSR

UDC 669.14.018.841

BABAKOV, A. A., ~~ZHADAN, T. A.~~ LEVIN, F. L., POSYSAEVA, I. I., and FEL'DGANDLER, E. G. (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

"Low-Carbon Corrosion-Resistant Steels"

Moscow, Stal', No 9, Sep 72, pp 836-839

Abstract: A survey is presented of investigations on corrosion-resistant -- especially low-carbon -- chromium-nickel steels of the austenitic class. The effect of various components of chemical composition on the susceptibility of the steels to intercrystalline corrosion is considered. It is recommended that carbon content in the steel be reduced and that the solid solution be stabilized by special alloying to prevent the formation of excess phases (σ -phase) or carbides on the grain boundaries. The corrosion properties of new, recently developed steels of the austenitic and ferrite-austenitic class are discussed.

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USSR

UDC 620.196

ZHADAN, T. A., BABAKOV, A. A., SHARONOVA, T. N., and VASIL'YEVA, N. M.,
Central Scientific Research Institute of Ferrous Metallurgy imeni I. P.
Bardin, State Scientific Research Institute of the Nitric Industry

"Investigation of the Inclination of 000Kh20N20S5 (ZI-52) Steel to Inter-
crystalline Corrosion"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp42-44

Abstract: 000Kh20N20S5 (ZI-52) steel, in spite of its carbon content, shows a tendency to intercrystalline corrosion (ICC) in strong nitric acid in zones of welded joints or after tempering at 700-800°, but the steel retains high resistance to ICC in tests by the AM (GOST 6032-52) method after analogous processing. The tendency of ZI-52 steel to embrittlement and to ICC (after tests in 23 n. HNO₃ on the temperature and duration of tempering are discussed by reference to diagrams. On the basis of experimental data, 000Kh20N20S5 (ZI-52) steel which has been subjected to a 23 n. HNO₃ reaction at 85-100° can be recommended only in the hardened state for unwelded constructions or with obligatory hardening after welding. Three figures, four bibliographic references.

1/1

USSR

UDC 669.15.621.785.79

BERNSHTEYN, M. L., ZHADAN, V. T., KHENSGER, K. E., Moscow Institute of Steel and Alloys

"Structure and Properties of 50KhGA Steel After High-Temperature Thermo-mechanical Treatment"

Moscow, Izvestiya VUZov: Chernaya Metallurgiya, No 11, 1972, pp 150-153

Abstract: The authors investigate the kinetics of variation in the structure (austenite grain size and shape) and mechanical properties of 50KhGA spring steel during post-deformation aging before quenching. It is found that the structural changes and mechanical properties resulting from post-deformation delays of 0.2-10 s depend on the state of the initial austenite, the deformation temperature and the degree of reduction. It is shown that there is no direct correlation between the reduction in size of the austenite grain as a result of recrystallization and the increase in strength characteristics after ausforming of 50KhGA steel. The improvement in mechanical properties can be attributed to a well-developed substructure formed as a result of dynamic polygonization. Optimum ausforming schedules for 50KhGA steel are formulated and recommended on the basis of experimental data and analysis of the literature.

1/1

- 35 -

Forming

UDC 621.771.8

USSR

ZHADAN, V. T., KULAK, Yu. Ye., and KULAK, G. K.

"Effect of the Rate of Reductions and Temperature-Speed Conditions on Roll Wear in Rolling H-Beams"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 125-129

Translation: A dependency is established between the intensity of wear on roller rolls made of chrome-nickel cast iron with lamellar graphite, and the length of the area of deformation, lateral reduction of the flanges, speed of deformation, and temperature of the metal when rolling H-beams. The dependencies obtained make it possible to calculate the intensity of wear, taking into account the actual operating conditions of roller rolls in producing H-beams. Six figures and five bibliographic entries.

1/1

USSR

UDC 621.178.15

ZHADAN, V. T., KULAK, Yu. Ye., and KULAK, G. K.

"Investigation of the Effect of Chemical Composition on the Hardness of Rolls Made of Modular Cast Iron"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No 64, 1970, pp 72-79

Translation: The correlation analysis method is used to study the effect of chemical elements and the casting diameter of rolls made of modular cast iron on the hardness of the rolls. A considerable positive effect on roll hardness is established for chromium and magnesium, while a negative effect is established for silicon and the casting diameters of the rolls. In order to receive high hardness indicators, it is essential to maintain the chromium content at the upper limit, and silicon at the lower limit. As a result of the study, an equation is obtained and a nomogram constructed for determining the hardness of rolls as a function of the content of chromium, magnesium, and silicon, and dependent on the roll diameter; in this way, it is possible to eliminate the labor-consuming operation of selecting templates for measuring hardness and the measurement operation. Two illustrations, three tables, and four bibliographic entries.

1/1

USSR

UDC 669.1:338

ZHADAN, V. T., and STEFANOV, V. Ye.

"The Economic Efficiency of Rolling Channels on a Structural Mill by the Gradual Bending of Flanges Method"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No 64, 1970, pp 87-91

Translation: Use of the gradual flange bending method in rolling channels at structural mill 650 of the Azovstal' Plant resulted in a reduction in the depth of groove incisions in rolls and the size of the initial diameters of the roll barrels, an increase in their resistance to wear, replacement of steel rolls on the precleaning stand with a trio of cast iron ones, rolling in a negative field of tolerances and decreasing the average mass of a running meter of profile, decreasing the width of the beads and locating the doubler-passes, etc. All this made it possible to reduce expenditures for rolls and lower the average running meter of profile's mass by one percent, which produced an annual economic benefit of 474,960 rubles in rolling about 150,000 tons of channels. One table and four bibliographic entries.

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USSR

UDC 621.771.8

POLYKHIN, P. I., BERKOVSKIY, V. S., ZHADAN, V. T., FEDOSOV, B. M., STETSENKO, N. V., OSADCHIY, N. A., AVRUNIN, P. M., and KOVANIYUK, Yu. P.

"Developing New Technology for Rolling the PSh-20 Section from Kh18Ni9Ti Steel on the 550 Mill"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No. 64, 1970, pp 106-113

Translation: A brief description is given of the technology for rolling the shaped sections being studied. An analysis is made of the existing rolled pass design and deformation parameters by templates, and data are given from an investigation of the power parameters of rolling. On the basis of an analysis of the data received and the technical-economic indicators, a new technology for the process of rolling the sections under study is developed. Eleven illustrations and one table.

USSR

UDC 621.771.8

ZHADAN, V. T., and KULAK, Yu. Ye.

"The Hardness of Rolls in Rail and Structural Mills"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya"
Publishing House, No 64, 1970, pp 116-121

Translation: It is established, on the basis of an analysis of used sets of rolls on rail and structural mills and at structural mills, that in order to increase the service life of rolls, their minimum hardness should be raised by 50-60 HB, and the maximum by 20-40 HB, beyond the average hardness values of rolls delivered to metallurgical plants. Equations were derived for determining the hardness of a roll at any depth from the surface layer, if the hardness at a depth of 75 or 100 millimeters is known. A principle for selecting roll insets by their hardness is recommended. Three illustrations and one table.

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USSR

UDC 621.771.8

POLUKHIN, P. I., ZHADAN, V. T., BERKOVSKIY, V. S., FEDOSOV, B. M., and
BRYUKHOV, B. N.

"An Investigation of Forming in Flange Passes during Rolling of Stainless Steel"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya"
Publishing House, No 64, 1970, pp 79-87

Translation: The results of an experimental study of the forming process during the rolling of square billets of Kh18Ni9Ti steel in open-flange passes are considered. Selection of the geometric parameters of the pass and billet is substantiated. Results are presented of an analysis of forming parameters as a function of the dimensions of the peak and the amount of roughing. Eight illustrations, one table, and five bibliographic entries.

1/1

- 24 -

USSR

UDC 621.771.031.07

Z
ZHADAN, V. T., KULAK, Yu. Ye., and VORONINA, V. A., Moscow Institute of Steels and Alloys; Ukrainian Scientific Research Institute of Metals

"Strength Properties of Steel Rolls"

Moscow, Metallurg, No 8, Aug 70, pp 40-42

Abstract: In selecting materials for structural and merchant rolls, the primary indicators are strength properties. Thus, a study was made of the tensile strength, transverse strength, torsional strength, and endurance limit of a number of steels. Test data on 90KhF, 60KhN, U10, and 150KhNM steels are cited. The strength properties of hypereutectic heat-treated steel are 20-30% higher than those of U10 not subjected to such treatment. A principal property of roll materials is torsional strength. The tensile strength-torsional strength ratio decreases with an increase in strength of the steel. In U10 steel, the torsional strength is somewhat higher than its tensile strength, while the opposite is observed in 55Kh, 60KhN, and 90KhF steels. An essential indicator qualifying a steel for roll material is the fatigue limit. It accounts for only 40% of the tensile strength. The fatigue limits of 60KhN and 90KhF forged steels are among the highest and have the same value, while those of 55Kh are 10-12% lower. Consequently, rolls from 55Kh and 90KhF, with respect to their strength properties,

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USSR

ZHADAN, V. T., et al, Metallurg, no 3, Aug 70, pp 40-42

may be used in structural mill rolls as substitutes for 60RGN, which contains scarce nickel.

2/2

USSR

UDC 612.821:612.819:612.825+612.822.3

IGNAT'YEV, D. A., KARNUP, S. B., MURADOVA, I. O. and ZHADIN, M. N.,
Institute of Biological Physics, USSR Academy of Sciences, Pushchino-na-Oke

"On the Interaction of Cortical Induced Potentials on the Elaboration of a
Conditioned Reflex"

Moscow, Doklady Akademii Nauk SSSR, Vol 213, No 2, 1973, pp 490-491

Abstract: An attempt was made to develop concrete characteristics stipulating similarity between induced potentials in the cerebral visual and motor cores of rabbits registered during the early stages of defensive conditioned reflex elaboration. The coefficient of cross-correlation, presentation of potentials as a superposition of transient oscillations and factor analysis were used. It was found that the coefficient of cross-correlation increased, reached a maximum and then fell with a concomitant decrease in motor reactions. This is shown to be due to the convergence of frequency and phase of responses in the theta region. These results are said to show that Livanov's concepts on the special role of theta-rhythm synchronization in stimulation transmission may be extended to cortical induced potentials.

1/1

- 70 -

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PLATINUM,II, ETHYLENEDIAMINETETRAACETATE SOLUTIONS --U-
AUTHOR--(03)--YEZERSKAYA, N.A., KISELEVA, I.N., ZHADANOV, E.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1046-50
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PLATINUM COMPLEX, POLAROGRAPHIC ANALYSIS, ETHYLENEDIAMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1152 STEP NO--UR/0078/70/015/004/1046/1050
CIRC ACCESSION NO--AP0128574
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0123574

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. IN THE ABSENCE OF AN EXCESS OF CL
NEGATIVE CONCN. IN THE SOLN., PTH SUB4 YCL SUB2 (I) (Y PRIME NEGATIVE4
EQUALS ANION OF EDTA) CONVERTS IN AQ. SOLNS. (AT PH LESS THAN 2) TO PTH
SUB4 Y(H SUB2 U) SUB2 PRIME POSITIVE2 AND PTH SUB2 Y. PT PRIME
NEGATIVE2, HAVING TETRADENTATE Y, FORMS ON DEPROTONATION OF PTH SUB2 Y.
I EXIST IN SOLNS. CNTG. MORE THAN 1M NaCl AND ON INCREASE OF PH OF THE
SOLN. FROM PH 2 TO PH 8 IT DEPROTONATES TO PTYCL SUB2 PRIME NEGATIVE4
HAVING BIDENTATE Y. IN THE PRESENCE OF NaClO SUB4, THE POLAROGRAPHIC
CURVE OF I HAS 2 WAVES (WITH E SUB1 HALF MINUS 0.30 AND MINUS 0.54 V)
AND IN THE PRESENCE OF NaCl, ONLY 1 WAVE. FACILITY: INST.
OBSSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 51:330.115

ZHADANOV, O. K.

"Composition of Schedules on a Network Graph with Limited Resources"

Sistemy Raspredeleniya Resursov na Grafakh [Systems for Distribution of Resources on Graphs -- Collection of Works], Moscow, Acad. Sci. USSR Computer Center, 1970, pp 49-62, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V557 from the Introduction).

Translation: Suppose a network graph is written, in which for each operation (i, j) , a duration t_{ij} of its performance is determined with a fixed level (intensity) $q_{ij}^{(k)}$ of utilization of the k th type of resources, which is the defining type for this operation. Suppose the limitation on the daily utilization of resources is fixed by the vector

$$Q(t) = \{Q^{(1)}(t), \dots, Q^{(k)}(t)\}.$$

considering that neither intensification nor interruption of the performance of any operation is permitted, the problem is to determine calendar moments of beginning and completion of operations such that the time of performance of the entire combination of operations will be minimal and at any moment in time, limitations placed on none of the resources will be disrupted, i.e.

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USSR

UDC 51:330.115

ZHADANOV, O. K., Sistemy Raspredeleniya Resursov na Grafakh, Moscow, Acad. Sci.
USSR Computer Center, 1970, pp 49-62.

$$\sum_{i \in F(t)} q_{ij}^{(k)} < Q^{(k)}(t).$$

where $F(t)$ is the working front.

USSR

UDC 617-001.18-08

ZHADENOV, I. I., CHUYENKOV, V. F., and GORFINKEL', I. V., Chair of Hospital Surgery, Therapeutic Faculty, Saratov Medical Institute

"Recovery of Patients from Deep Hypothermia"

Moscow, Khirurgiya, No 1, 1970, pp 126-127

Abstract: Excerpts from the case histories of two drunks brought to the hospital unconscious (the rectal and axillary temperatures were 24.6° C and 23.6° C in one and 22.8° C and 21.8° C in the other) and successfully resuscitated by active therapy are presented. Therapy included transfusions of whole blood, 10% glucose solution, blood substitute, protein hydrolysates, intravenous injection of sodium bicarbonate, vitamins, hydrocortisone, novocain block, and oxygen therapy.

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- 114 -

UNCLASSIFIED

PROCESSING DATE--09OCT70

L/2 022

TITLE--TENSODIODE EFFECT DURING THE BENDING OF ELONGATED SEMICONDUCTOR
DIODE PLATES -U-

AUTHOR--(04)-GRIBNIKOV, Z.S., ZHADKO, I.P., ROMANOV, V.O., SERDEGA, B.K.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN'KII FIZICHNII ZHURNAL, VOL. 15, FEB. 1970, P 300-317

DATE PUBLISHED--70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SEMICONDUCTOR DIODE, ELECTRIC CURRENT, ELECTRIC PROPERTY,
BENDING STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/0335

STEP NO--UR/0185/70/015/000/0300/0317

CIRC ACCESSION NO--AP0110223

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110223

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL AND EXPERIMENTAL STUDY OF THE EFFECT OF BENDING ON THE CURRENT VOLTAGE CHARACTERISTIC OF ELONGATED FLAT SEMICONDUCTOR DIODES. PROCEDURES ARE GIVEN FOR CALCULATING THE CURRENT VOLTAGE CHARACTERISTICS OF DIODES OF THIS CLASS, SUBJECTED TO BENDING. THE CURRENT VOLTAGE CHARACTERISTICS OF GERMANIUM DIODES OF THIS CLASS ARE MEASURED. THE DEPENDENCE OF THESE CHARACTERISTICS ON THE TYPE AND DEGREE OF BENDING AND THE LENGTH OF THE DIODE BASE IS STUDIED. THE EXPERIMENTAL RESULTS ARE FOUND TO BE IN GOOD AGREEMENT WITH THEORETICAL EXPECTATIONS. IT IS BELIEVED THAT THESE DIODES CAN BE EFFECTIVELY USED IN AUTOMATIC CONTROL SYSTEM.
FACILITY: AKADEMIJA NAUK UKRAINS'KOI RSR, INSTITUT NAPIVPROVIDNIKIV, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

Acc. Nr:

AP0046688

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:
LR0185

(A70-23191 # Transverse Dember effect in elastically bent germanium plates (Poperechnii efekt Dembera v pruzhno zignutikh plastinkakh germaniiu). I. P. Zhad'ko and V. O. Romaniuk (Akademiia Nauk Ukrain's'koi RSR, Institut Napivprovidnikiv, Kiev, Ukrainian SSR). *Ukrains'kii Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 62-68. 16 refs. In Ukrainian.

Study of the transverse Dember effect in an elastically bent single crystal of germanium subjected to continuous illumination of one face by a narrow light beam. The theoretical calculations and experimental data showed that the distribution of emf is determined by the ratio between the dimensions of the germanium plate and the diffusion length as well as the values of the surface recombination on the plate sides. It is shown that the bent germanium plate may be used as a position-sensitive photocell.

Z.M.

ALS

REEL/FRAME
19782004

18

USSR

ZHAFYAROV, A. Zh.

UDC: 51

"Dual Approach to One of the Forms of the Trunkline Theorems"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works. Institute of Mathematics of the Siberian Department, Academy of Sciences of the USSR), 1972, vyp. 7(24), pp 5-13 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V541 by the author)

Translation: The paper is devoted to a study of the asymptotic behavior of an optimum trajectory in Neumann and Neumann-Gale models in terms of the characteristic of the trajectory. Models are considered in which the trunkline theorem in strongest form occurs.

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- 39 -

USSR

ZHAFYAROV, A. Zh.

UDC: 51

"Trunkline Theorem in Strongest Form"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works. Institute of Mathematics of the Siberian Department, Academy of Sciences of the USSR), 1972, vyp. 7(24), pp 14-25 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V542 by the author)

Translation: So-called ϕ -optimum trajectories are considered for which the trunkline theorem in strongest form occurs in Neumann models, and convergence of optimum trajectories to the Neumann boundary occurs in Gale models. Neumann-Gale models are considered which have a unique equilibrium cost vector. An important class of models is considered in which these theorems hold.

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USSR

UDC: 51

ZHAFYAROV, A. Zh.

"Main-Line Theorem in Its Strongest Form"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works in the Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 14-25 (from RZh--Matematika, No 7, 1973, Abstract No 7V542)

Translation: The author considers the so-called Q -optimal trajectories for which the main-line theorem appears in its strongest form in Neumann models, while in Geyl models the optimal trajectories converge to the Neumann limit. Neymann-Geyl models with the values of unit equilibrium vectors are considered. An important class of models in which these theorems occur is described. Author's abstract.

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- 43 -

USSR

UDC: 51

ZHAFYAROV, A. Zh.

"Dual Approach to One Form of the Main-Line Theorem"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works of the Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 5-13 (from RZh--Matematika, No 7, 1973, Abstract No 7V541)

Translation: This paper is devoted to investigation of the asymptotic behavior of the optimal trajectory in Neuman and Neuman-Geyl models through its characteristics. Models are examined in which the main-line theorem in its strongest form applies. Author's abstract.

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- 40 -

USSR

UDC: 51

ZHAFYAROV, A. Zh.

"Concerning Uniqueness of Equilibrium Prices in a Neumann Model"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works, Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR), 1971, vyp. 2(19), pp 36-56 (from RZh-Kibernetika, No 5, May '72, Abstract No 5v445)

Translation: Various conditions are investigated under which the Neumann model has a unique equilibrium price vector. V. Malinnikov.

1/1

- 30 -

USSR

UDC: 51

ZHAFYAROV, A. Zh.

"Main Line Theorem in One Model"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works, Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR), 1971, vyp. 2(19), pp 7-35 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V444)

Translation: The paper presents necessary and sufficient conditions for the initial state under which a main line theorem in special form holds in models of the Morishima type. Conditions are studied under which the rate of growth of the entire model coincides with the rate of growth of a submodel of some superposition of this model. V. Malinnikov.

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USSR

UDC: 51

ZHAFYAROV, A. Zh.

"On a Generalization of the Nikaido Main Line Theorem in Strong Form"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works. Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR), 1971, vyp. 2(19), pp 57-64 (from RZh-Kibernetika, No 5, May 72, Abstract No 5v446)

Translation: A main line theorem in strong form is proved for a model with fixed technology in which a Neumann surface is stretched over a finite number of generatrices. V. Malinnikov.

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USSR

UDC 51

ZHAFYAROV, A. ZH.

"Uniqueness of Equilibrium Prices in a Neumann Model"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works of Institute of Mathematics, Siberian Department of Academy of Sciences USSR), 1971, vyp 2(19), pp 36-56 (from RZh-Matematika, No 5, May 72, Abstract No 5V445 by V. MALINNIKOV)

Translation: A study is made of various conditions under which a Neumann model has a unique equilibrium price vector.

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- 66 -

USSR

UDC: 621.382.2

ZHAGATA, L. A., KALNINYA, R. P., FELTYN', I. A., and FREYBERGA, L. A.

"Dielectric Films Obtained by Low-Temperature Oxidation of Tetraetoxyasilane"

Riga, Izvestiya Akademii nauk Latvyskoy SSR -- Seriya fizicheskikh i tekhnicheskikh nauk, No 5, 1972, pp 34-39

Abstract: Experimental research is described for the formation of films by oxidized tetraetoxyasilane in the temperature range of 270-370° C in dry oxygen and in a mixture of oxygen and water vapor. Changes in the composition and characteristics of the films as a result of the changes in the deposition techniques were also observed in the course of these experiments. The specimen films were grown on chemically and mechanically polished n- and p-type silicon substrates in a device described in an earlier article published in this same journal (No 1, 1965, p 26) by the second and third authors named above. Film thickness was measured by the method of interference lines and film composition was determined by the method of infrared absorption. Electrical characteristics of the films were investigated by the MOS structure method. The authors are associated with the Physics-Energy Institute. Academy of Sciences of the Latvian SSR.

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- 136 -

1/2 D10 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--REFRACTORY MIXTURE FOR LINING THE IRON TROUGHS OF BLAST FURNACES
-U-
AUTHOR--(05)-PRYADKO, V.M., KOTOV, K.I., MAGALA, V.S., ZHAK, A.M., TRACH,
I.Y.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,135
REFERENCE--OTKRYTIYA, IZOBRET., PROM, OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR 70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, REFRACTORY MATERIAL, METALLURGIC PATENT,
TECHNICAL STANDARD/(U)GOST TSMTU446954 REFRACTORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/1060

STEP NO--UR/C482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130095

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130095

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REFRACTORY MIXT. CONTG. A FILLER AND BINDER HAS THE FOLLOWING COMPN. (IN KG-M PRIME3): CRUSHED HIGH ALUMINA BRICK (PARTICLE SIZE FRACTION 0.15-5 MM) 500-500, CRUSHED HIGH ALUMINA BRICK (PARTICLE SIZE 5-10 MM) 900-1000, CRUSHED ALUMINA BRICK (PARTICLE SIZE SMALLER THAN 0.09 MM) 400-500, FE FREE ZR (ACCORDING TO GOST TSMU 4469 54) 200-50, AND 80PERCENT PHOSPHORIC ACID 180-200 L.-M PRIME3. FACILITY: DNEPROPETROVSK CONSTRUCTION ENGINEERING INSTITUTE AND PETROVSKII, G. I. METALLURGICAL PLANT, DNEPROPETROVSK.

UNCLASSIFIED

USSR

UDC: 681.3

ZHAK, D., LUKINA, V., NASHLYUNAS, R.

"Experiment in Use of the 'RUTA-701' Device in the System of the Soviet Central Statistical Administration, and Calculations of the Effectiveness of its Use"

V sb. Elektronno-vychisl. tekhn. i programmir. (Computer Technology and Programming--collection of works), vyp. 3, Moscow, "Statistika", 1970, pp 39-49 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V699)

Translation: A description is given of the first experiment in using the "RUTA-701" reader in the system of the Soviet Central Statistical Administration for automatic readout of normalized handwritten symbols from blanks containing statistical information. Calculations are presented on the economic effectiveness of using this device. Authors' abstract.

1/1

USSR

UDC: 51

ZHAK, S. V.

"On Realization of the Method of Mutual Concessions in the Case of Various Goal Functions"

Tr. 4-y Zimm. shkoily po mat. programmir. i smezhn. voprosam, 1971, vyp. 2
(Works of the Fourth Winter School on Mathematical Programming and Related Problems, 1971, No 2), Moscow, 1971, pp 18-20 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V385)

Translation: The author enumerates various approaches to the problem of multiple-test optimization including the method of mutual concessions which requires selecting a compromise decision giving identical relative losses in advantage with respect to each criterion. In the author's opinion this method is the simplest and most justified logically. In the case of a linear problem, this scheme is most readily realized by adding a control module to standard linear programming schemes. M. Kazakova,

1/1

- 18 -

USSR

UDC 577.4

ZHAK, S. V., MELKADZE, A. G.

"Optimization of Operating Time between Repairs"

V sb. Teoriya i praktika mash. obrabotki inform. (Theory and Practice of Machine Data Processing -- collection of works), Rostov-na-Donu, 1971, pp 63-70 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V489)

Translation: See RZh-Matematika, 1972, 2V544.

1/1

USSR

UDC 51

ZHAK, S.V.

"Realization of Mutual-Concessions Method With Some Objective Functions"

Tr. 4-y Zimn. shkoly po mat. programmir. i smezh. voprosam. 1971, vyp. 2.
(Proceedings of Fourth Winter School on Mathematical Programming and Related Questions, 1971, Vyp. 2), Moscow, 1971, pp 18-20 (from RZh-Matematika, No 5, May 72, Abstract No 5V385 by M. KAZAKOVA)

Translation: The author enumerates certain approaches to the problem of multicriterion optimization, including the mutual-concessions method, which requires the selection of a compromise solution yielding the same relative losses in winning according to each criterion. In the author's opinion, this method is simplest and logically justified. In the case of a linear problem this scheme is easily realized by the addition of a control block to standard linear-programming programs.

1/1

- 20 -

USSR

UDC 612.833.755-057:007.51

GORSHKOV, S. I., SHARDAKOVA, E. F., and ZHAKHMETOV, Ye. G., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Research on the Latent Time of Tendon Reflexes of Keyboard Computer Operators"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 33-36

Abstract: Latent times of hand tendon flexion-extension reflexes and knee reflexes of 18-25-year-old female keyboard computer operators were studied as indexes of the functional state of the neuromuscular apparatus. Within 1 work day latent times of hand tendon reflexes increased significantly, more so for the left hand (flexion -- 39.3, extension -- 19 msec) than the right (flexion -- 8.5, extension -- 5.4 msec), probably because the left hand dominates in keyboard operation. Latent times of the knee reflex increased insignificantly, more so for the left leg. Latent times of all reflexes also increased during the work week, probably due to fatigue buildup. Increases were larger for the left hand (flexion -- 13.5, extension -- 1.4 msec) than the right (flexion -- 7.0, extension -- 8.0 msec) and insignificant for the knee reflex. In all cases the initial latent time was longer for left appendages. It is concluded that tendon reflexes are adequate and sensitive indexes of the state of the motor apparatus.

1/1

USSR

ZHAKHAROV, A. V., SAMARSKIY, A. A., SVESHNIKOV, A. G.

"Application of the Large Particle Method to Calculating the Motion of a Charged Beam in an Electromagnetic Field, Considering the Space Charge of the Beam"

Moscow, Vychislitel'nyye Metody i Programirovaniye, XVI, 1971, pp 225-243

Abstract: The large particle method is used in the nonstationary problem of calculating the motion of a charged beam in an electromagnetic field, considering the space charge of the beam. The study was made to discover a number of procedural problems in particular, the problems connecting with selecting the numerical method of determining the charge particle density. The essence of the method consists in subdividing the region of existence of the charge at the initial point in time into small volumes ΔV and concentrating each charge contained in the volume ΔV at the center of inertia of the volume ΔV . The charge obtained in this way is considered a "large particle." The i -th particle contains $M_i \gg 1$ elementary charges.

The motion of the large particles is defined by the system of equations coinciding, with respect to form, with the equations of motion of an elementary charge:

1/2

$$d\vec{r}/dt = \vec{v}, \quad d\vec{v}/dt = c/m(\vec{E} + (1/c)[\vec{v}, \vec{H}]).$$